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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,705	08/05/2003	Shashank Nemawarkar	NWISP041	8331

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EXAMINER

SUGENT, JAMES F

ART UNIT PAPER NUMBER

2116

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/635,705

Applicant(s)

NEMAWARKAR ET AL.

Examiner

James Sugent

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/26/2004 + 1/9/2006 JS</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

5 Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10 **Claims 10-11 and 13-16** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 10 cites “processor masks” with no mention of physical or logical relationship among elements, designed to support interconnection controller functions. Therefore, “processor masks” is deemed non-statutory and rejected under 35 U.S.C. 101.

15 **Claim 11** cites “data structures” with no mention of physical or logical relationship among data elements, designed to support specific data manipulation functions. Therefore, “data structures” is deemed non-statutory and rejected under 35 U.S.C. 101. Claims 13-16 are thereby rejected secondary to their dependence upon claim 11.

20 *Claim Rejections - 35 USC § 103*

 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

25 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pawlowski et al (U.S. Patent No. 6,151,663) (hereinafter referred to as Pawlowski) in view of Trans (U.S. Patent No. 6,377,640 B2) (hereinafter referred to as Trans).

As to **claim 1**, Pawlowski discloses a computer system, comprising:

- 5 • a first cluster (10) including a first plurality of processors (11) and a first interconnection controller (16), the first plurality of processors and the first interconnection controller interconnected (via local cluster CPU bus) by first point-to-point intra-cluster links (column 2, line 59 thru column 3, line 22); and
- 10 • a second cluster (10) including a second plurality of processors (11) and a second interconnection controller (16), the second plurality of processors and the second interconnection controller interconnected (via local cluster CPU bus) by second point-to-point intra-cluster links (column 2, line 59 thru column 3, line 22), the first interconnection controller coupled to the second
- 15 interconnection controller (via system bus 20 and controlled by inter-cluster system controller 21) by point-to-point inter-cluster links (column 3, lines 6-22).

Pawlowski does not disclose the first and second interconnection controllers configured to: perform an initialization sequence that establishes a characteristic skew pattern between data
20 lanes of the point-to-point inter-cluster links; encode clock data in each symbol transmitted on the point-to-point inter-cluster links; recover clock data from each symbol received on the point-

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to-point inter-cluster links; and apply the characteristic skew pattern to correct for skew between data lanes of the point-to-point inter-cluster links.

Trans teaches a means and method for a synchronous network communications system wherein the node controllers (16) are synchronized with each other using a clock transfer system wherein the node controllers are configured to: perform an initialization sequence that establishes a characteristic skew pattern (offsets; column 21, line 42 thru column 22, line 9) between data lanes of the point-to-point inter-cluster links (column 10, line 31 thru column 11, line 26); encode clock data in each symbol transmitted on the point-to-point inter-cluster links (column 17, line 65 thru column 18, line 12); recover clock data from each symbol received on the point-to-point inter-cluster links (column 14, lines 25-35); and apply the characteristic skew pattern to correct for skew between data lanes of the point-to-point inter-cluster links (column 14, lines 25-35).

It would have been obvious to one of ordinary skill of the art, having the teachings of Pawlowski and Trans before him at the time the invention was made, to modify the cluster controller disclosed by Pawlowski to use the node controller skew repair configurations as taught by Trans.

One of ordinary skill in the art would be motivated to make use of node controller skew repair configurations in view of the teachings of Trans, as doing so would give the added benefit of a security system (column 2, lines 39-46).

As to **claim 2**, Trans teaches a system wherein the encoding step comprises encoding 8-bit symbols as 10-bit symbols (column 61, lines 6-17).

As to **claim 3**, Trans teaches a system wherein the encoding step comprises encoding 4-bit symbols as 5-bit symbols (column 60, line 63 thru column 61, line 5).

As to **claim 4**, Trans teaches a system wherein the initialization sequence comprises the use of one or more training sequences having known structures and lengths (column 10, line 40
5 thru column 11, line 26).

As to **claim 5**, Trans teaches a system wherein the initialization sequence comprises establishing a phase lock loop for incoming frequency-encoded data (column 18, lines 20-61).

As to **claim 6**, Pawlowski discloses an interconnection controller, comprising:

- an intra-cluster interface (16 via system bus 20) configured for coupling with
10 intra-cluster links (10) to a plurality of local processors (11) arranged in a point-to-point architecture in a local cluster (column 2, line 59 thru column 3, line 5);
- an inter-cluster interface (21) configured for coupling with an inter-cluster link (10 via system bus 20) to a non-local interconnection controller (16) in a
15 non-local cluster (10) (column 2, line 59 thru column 3, line 5).

Pawlowski does not disclose a transceiver configured to: perform an initialization sequence with the non-local interconnection controller that establishes a characteristic skew pattern between data lanes of the point-to-point inter-cluster links; recover clock data from symbols received on the point-to-point inter-cluster links; and apply the characteristic skew
20 pattern to correct for skew between data lanes of the point-to-point inter-cluster links.

Trans teaches a means and method for a synchronous network communications system wherein the node controllers (16) are synchronized with each other using a clock transfer system

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wherein the node controllers contain a transceiver (31; column 14, lines 10-17) configured to:
perform an initialization sequence with the non-local interconnection controller that establishes a
characteristic skew pattern between data lanes of the point-to-point inter-cluster links (column
18, lines 20-37); recover clock data from symbols received on the point-to-point inter-cluster
5 links (column 14, lines 25-35); and apply the characteristic skew pattern to correct for skew
between data lanes of the point-to-point inter-cluster links (column 14, lines 25-35).

It would have been obvious to one of ordinary skill of the art, having the teachings of
Pawlowski and Trans before him at the time the invention was made, to modify the cluster
controller disclosed by Pawlowski to use the node controller skew repair configurations as taught
10 by Trans.

One of ordinary skill in the art would be motivated to make use of node controller skew
repair configurations in view of the teachings of Trans, as doing so would give the added benefit
of a security system (column 2, lines 39-46).

As to **claim 7**, Trans teaches an interconnection controller further configured to encode
15 clock data in symbols transmitted on the point-to-point inter-cluster links (column 17, line 65
thru column 18, line 12).

As to **claim 8**, Pawlowski discloses an interconnection controller further configured to
forward symbols to the intra-cluster interface for transmission via the intra-cluster links to at
least one of the plurality of local processors (column 3, lines 23-25).

20 As to **claim 9**, Pawlowski discloses an integrated circuit comprising the interconnection
controller (column 2, line 59 thru column 3, line 5).

As to **claim 12**, Pawlowski discloses an integrated circuit wherein the integrated circuit comprises an application-specific integrated circuit (column 59, lines 48-55).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Sugent whose telephone number is (571) 272-5726. The examiner can normally be reached on 8AM - 4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

James Sugent
Patent Examiner, Art Unit 2116
January 24, 2006


LYNNE H. BROWNE
SUPERVISORY PATENT EXAMINER
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